Artists' Depictions of Catsteps in the Loess Hills of Iowa: Evidence for Mid-Nineteenth Century Climate Change

Kimberly R. Dillon, Simpson College
Steven H. Emerman, Simpson College
Pamela K. Wilcox, Simpson College

Document Type
Research

Keywords
catsteps, climate change, Little Ice Age, Loess Hills, terracettes

Abstract
Catsteps are the staircase-like features common on hillslopes of the Loess Hills of western Iowa. The record of artistic depictions of the Loess Hills was examined to determine when catsteps appeared. George Catlin, Karl Bodmer, and John James Audubon traveled up the Missouri River in 1832, 1833 and 1843, respectively, and between them, produced 31 works of art depicting either the Loess Hills or the loess bluffs on the Nebraska side of the river. Only three works by Bodmer of Blackbird Hill on the Nebraska side possibly show catsteps. The Assistant State Geologist, Orestes St. John, produced six sketches of the Loess Hills in 1868, half of which show well-defined catsteps. In illustrated atlases of the Loess Hills, published in 1875 and 1885, 45-55% of drawings show well-defined catsteps. The appearance of catsteps during the late 1860s may be related to the appearance of gullies during the period 1860-1900. Census data show that peak grazing of the Loess Hills was not attained until about 1900 so that climate change following the end of the Little Ice Age in the mid-nineteenth century is a more likely explanation for the appearance of catsteps and gullies. The most probable climate change is a decrease in the periodicity of precipitation cycles, which will increase the slumping tendency of loess. Such a climate change is consistent with tree rings and ostracode shell chemistry from northeastern South Dakota, tree rings from eastern Montana, and fire scars from northwestern Minnesota, but not tree rings from central and eastern Iowa.

Publication Date
July-December 2006

Journal Title
Journal of the Iowa Academy of Science

Volume
113

Issue
3-4

First Page
69

Last Page
80

Copyright
© Copyright 2008 by the Iowa Academy of Science, Inc.

Language
EN

File Format
application/pdf

Recommended Citation
Dillon, Kimberly R.; Emerman, Steven H.; and K., Pamela Wilcox (2006) "Artists' Depictions of Catsteps in the Loess Hills of Iowa: Evidence for Mid-Nineteenth Century Climate Change," Journal of the Iowa Academy of Science: JIAS, 113(3-4), 69-80. Available at: https://scholarworks.uni.edu/jias/vol113/iss3/4
suggest. The WMO says that if the current warming trend continues, temperatures could rise 3-5°C by the end of this century. Temperature rises of 2°C had long been regarded as the gateway to dangerous warming. More recently, scientists and artists’ depictions of catsteps in the Loess Hills of Iowa: Evidence for Mid-Nineteenth Century Climate Change. Article. Full-text available. Catsteps (also known as terracettes) are the staircase-like features common on hillslopes of the Loess Hills of western Iowa. The record of artistic depictions of the Loess Hills was examined to determine when catsteps appeared. Landscape artists George Catlin and Karl Bodmer traveled up the Missouri River in 1832 and 1833, respectively, and between View. Developing Rating Curves for Bedrock Step-Pool Rivers using Sparse Data. Iowa History uses Nonfiction Informational Text, the entire lesson recorded on Audio, THREE Interactive Notebook assignments, and a variety of engaging hands-on activities to teach students about Iowa's first people, famous explorers, early government, important battles and wars, and the journey to Family Roots Iowa State Private School Military History Ancestry Family History Social Studies Civilization Genealogy. Iowa in the Civil War Project. Iowa In The Civil War.. lots of info. History Timeline Iowa State Important Dates 17th Century Social Studies Genealogy Study Classroom The U... Mission Hills Cemetery Headstones, Bay Mills, Chippewa County, Michigan. Mission Hills Cemetery Headstones, Bay Mills, Chippewa County, Michigan.